

# AMERICAN EDUCATIONAL MONTHLY.

JULY, 1874.

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## UNION SCHOOLS.\*

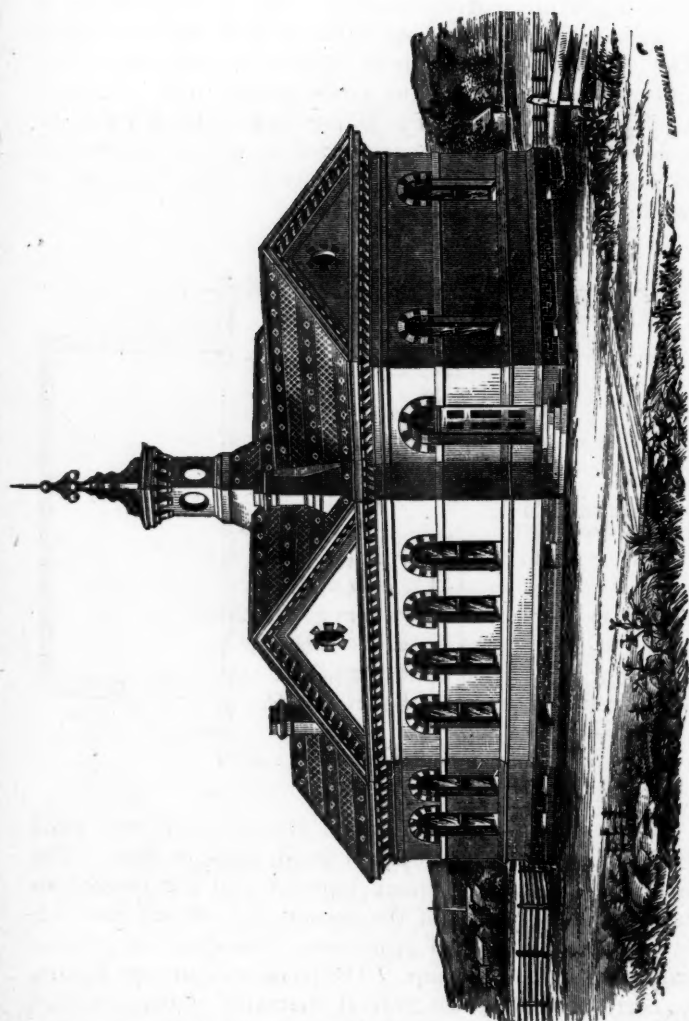
THIS design represents a building with two school-rooms, and another large room which may be used as a single recitation room, or divided into two. The school-rooms are separated by sliding doors, so that they may be thrown into one when occasion requires. Each room may be made to accommodate forty-two, fifty-six, or sixty-four pupils, without essentially changing the appearance of the building. The porches in front are ample for entryways and cloak-rooms. By a little addition to the width of the front projection, room would be obtained for staircases, and the building might be made two stories in height.



ELEVATION 1.—The roof of the main building is put on at right angles to the roofs of the front and rear projections, and all these are finished with gables. The eaves of the three buildings are of the same height, and an ornamental cornice is made to extend across the gables. The cornices have a moderate projection and are finished

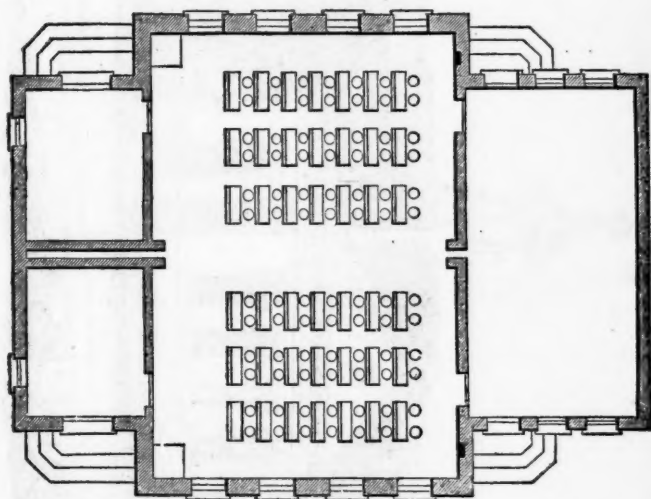
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\* From *Johannot's new work on "School-Houses."*

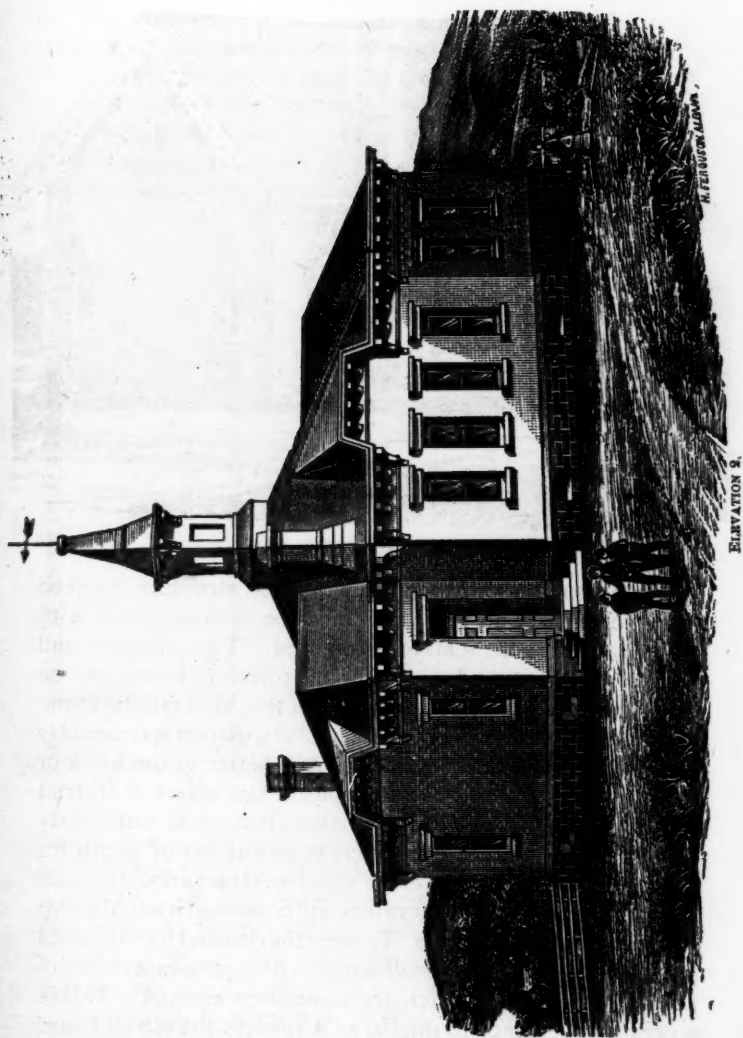


ELEVATION 1.

with modillions. The pitch of the roof is as little as is compatible with the use of shingles. The window and door heads are rounded arches, and a string-course is made in the wall at the base of the window and door caps. These caps should be made of stone of two different colors, and cut to conform to the circle of the arch. A good effect may be produced by making these of brick and stone combined. The cupola is needed to give completeness to the building, but it may be omitted. The materials of this building should be brick or stone.

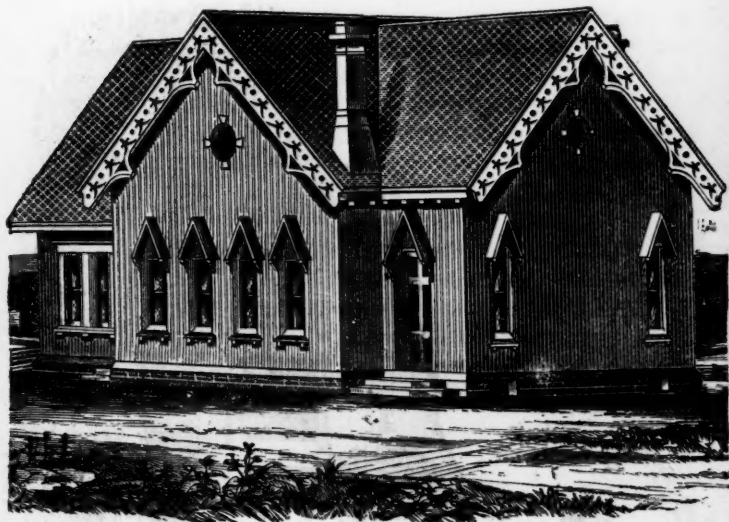


**ELEVATION 2.**—This elevation represents a very plain building, which may be built of wood, brick, or stone. The main building has a square hip-roof, and the projections have ordinary roofs with the corners cut off, and each side is relieved by a vertical projection. The cupola is a necessary part of the structure. The window-heads are square, to correspond with the general character of the elevation. If built of wood the finish might be of battens or clap-boards, but the former would best accord with the general style. The low roof, the bracketed cornice, and the gener-





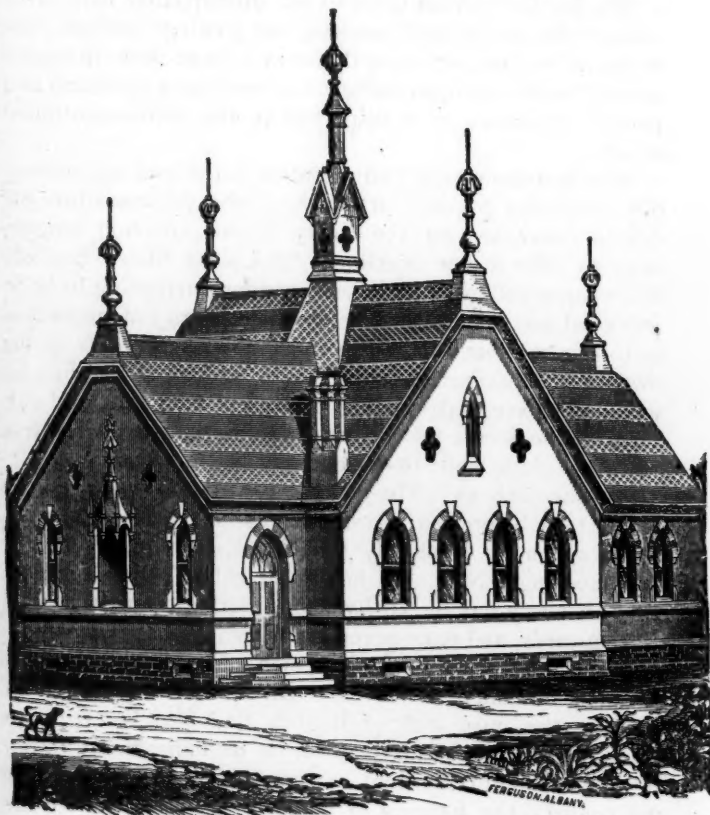
al structure of this building admirably fits it for a prairie region.



ELEVATION 3.

ELEVATION 3.—This is a plain wooden structure, finished with battens. The projecting cornice is ornamented with filigree-work, which may be omitted. The windows and doors are ornamented with simple projecting hoods, put on in the form of gables. A building of this kind will be found suitable in districts where the school population is constantly increasing. Generally speaking, it is better to use brick or stone in the erection of school-houses, but where a district is too poor to put up a house of these materials, sufficiently large to accommodate the increasing number of pupils for many years, it is well to erect wooden structures. In such cases a building like this elevation will commend itself, alike for its neatness and cheapness. To meet the demand for increased accommodations, two small wooden houses, situated in different parts of the district, are sometimes erected. This is a great convenience to pupils, as it renders the school-house more accessible, but it necessitates the expense of two establishments.

ELEVATION 4.—This elevation represents a structure with several features of the Gothic architecture. The roofs are all steep, and the gables terminate in pinnacles. The window and door heads are pointed arches, and the cupola is finished in similar forms. A sill-course extends around the



ELEVATION 4.

building level with the window-sills. The materials should be brick or stone, and the roof should be slate. In this building, little money is expended for ornament, and yet it makes a very ornamental structure. The effect may be greatly heightened by laying the slate on the roof in a neat pattern.

## UNITED STATES ENGLISH.

SUCH is the title of an article published not long since in *Chambers' Journal*, and reprinted in *Littell's Living Age*.

Our English cousins favor us not unfrequently with criticisms upon our style of speaking and writing; but we must do them the justice to own that they seldom do so in such a spirit of wilful misrepresentation, or with such profound and painful ignorance as is displayed in the above-mentioned article.

After bemoaning the "adulteration of the language among our American friends," its author, who professes himself deeply concerned for the purity of our common tongue, begs to offer a few specimens of United States English. Whereupon follows a list of expressions purporting to be in universal use among us, some of which charity alone forbids us to suspect that the writer must have evolved from his own inner consciousness, and others we can assure him he would not have heard among persons of education and culture, had he been so fortunate as to have had intercourse with that class, while in our country.

Phrases such as "The moon raises late"—"I guess he would raise before ten"—are given as specimens of the manner in which we habitually twist words out of their place and meaning. Now, we have listened to United States English every day of our lives for a period of twenty years and upwards, and have never yet heard the above expressions; which, to say the least, seems odd, since our English friend has found in them our "commonest mode of all for filtering the pure well of English undefiled"—a process which we wish he had explained, its meaning being, to our benighted comprehension, extremely ambiguous; for, in our country, the filtering of a well is usually done for the purpose of purification.

We are accused of having no "lovely, delightful, charming or beautiful" weather, and praise is said to be exhausted in the Great Republic when one has said, "This is a pretty day," or, "What a pretty morning!"—but we would willingly wager the sterling value of the writer's article

that he might walk the streets of New York or Boston, from morning till night, on the finest day that ever shone, listening to remarks upon the weather at every corner, without twice hearing it described as "pretty."

"Git" is said to be U. S. for "get," and our drivers are called to account for using it in lieu of "Gee up," which, for aught we know to the contrary, may be the more proper style of address; but we do not expect our coachmen to be accomplished philologists, and, as long as they drive acceptably and bring us home safely, we are not particular as to whether they tell their horses to "Git" or to "Gee up."

With a candor and humility, beautiful to contemplate, the writer confesses to have heard Englishmen talk of their "huncles" and "haunts," but sets off against this excess of *h's* among his countrymen, the advertisements in New York newspapers of "a hotel to let," which, he says, "is a little trying even to a Londoner;" and that may well be. Uriah Hup said "umblе"—we have no doubt he said "otel" also.

"If you speak of receiving anything, you must call it lifting," remarks our critic; and, "If you wish to say a man is brave, you will be better understood if you aver, with the utmost gravity, that he has 'plenty of sand'"—an expression which we have never heard, although we *have* heard of "plenty of cheek," and feel somewhat inclined to apply the term to a writer who picks up certain phrases in bar-rooms, gin-shops, and out-of-the-way places, and presents them as fair specimens of United States English.

We are represented as having universally adopted such words as "dancist, singist, walkist, orchardist, and the like," and the writer blandly admits that a useful word may sometimes be coined; "for," he says, "if a man were to shut his eyes and keep on firing, he could not help but hit the target once in a way." Now, this seems to be exactly what our amiable friend has been doing. He has fired off a volley of miscellaneous expressions, more or less low, vulgar and peculiar, and, naturally, has occasionally hit the mark; for it cannot be denied that the ridiculous word "rooster" is almost universally used among us in place of "cock"—as though hens did not roost as well—and it is to be feared that a large proportion of our men must plead guilty to the

accusation of wearing "pants" instead of "trousers." Also, although New York has got rid of her "Boss," and we trust that "we shall not see his like again," it is quite true that our laborers still apply that uncouth title to their employers.

But we should be slow to admit that it is customary, in our country, to talk of a "gentleman cow"—that no one here is ever known to be ill—we are always "sick"—that our stones, however small, and even our pebbles are universally dignified as rocks, and that it is the accepted rule among us to multiply our negatives, as in "A'int got no"—"Didn't see no," and kindred expressions.

Among our sins of speech already alluded to, and others which we have not space to notice, is a somewhat lengthy paragraph devoted to complaints of our pernicious habit of using green tea in preference to black.

The precise connection between tea and the English language we fail to perceive, and can only surmise that the writer must have been suffering from a too free use of the objectionable beverage when he selected his specimens of United States English.

M. L. H.

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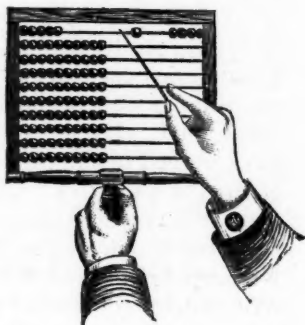
THE TROUBLES AT BOWDOIN.—With very few exceptions, the members of the three lower classes of Bowdoin College have resolved not to obey a rule of the institution which makes military drill obligatory. This exercise, at first very popular, became irksome, and a petition was sent to the Faculty asking that the obligatory part of the rule might be annulled. As far as we can learn no direct answer to this request was returned, and the students rebelled against the college authorities. At this writing the matter stands thus: the boys who return within ten days and submit to all college regulations may receive an honorable dismissal at the end of the year, all others will be expelled. However the matter may end it seems to point a lesson on the subject of the government of the college students. They are at that age when they resent anything like an arbitrary exertion of power, and will go to all lengths to maintain what they consider to be their rights; it is therefore unwise to treat them like school children.

## ARITHMETIC.\*

## COUNTING AND ADDING.

THE child's knowledge of *number* commences with counting objects. He cannot learn the value of *figures* from 1 to 10 until he can count *ten* objects. Therefore *counting* should be attended to first. The *Numeral Frame* is the most convenient apparatus to aid in teaching counting, and in giving children first ideas of simple numbers. The following illustration is intended to represent one mode of using the Numeral Frame for teaching counting. This mode of using it consists simply in holding the Frame be-

fore the pupils, and moving the balls on the first wire, one at a time, while the children count "one, two, three, four, five, six, seven, eight, nine, ten." The same counting may be repeated on the second, third, and on each succeeding wire. At first the counting should not extend beyond *ten*. When all the balls on each wire have been counted in this manner, proceed to move *one ball on each wire*, and let the



COUNTING.

children count to *ten*, as before. Let this exercise be continued, from day to day, until each child can count from one to ten, alone. Afterward, the counting may be extended to *twenty*, by moving the balls on *two* wires; then to *thirty*, by moving the balls on *three* wires, and so on to one hundred. When the pupils are allowed to count in concert, care should be taken to have them use the falling inflection at each number, to prevent them from acquiring a sing-song tone.

## ADDING.

When the pupils can count to one hundred by *ones*, the teacher may move *two balls* at a time, and thus train them to

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\* From "How to Teach. A Manual of Methods."



add by *twos*. As the teacher moves two balls on one wire, and two more on the next, and so on, the pupils say, "two, four, six, eight, ten, twelve, fourteen," etc.

After the pupils can count, or add thus by *twos*, as far as fifty, and have also learned to read and write figures as far as 20, the teacher may write a column of 2's on the blackboard, and train the pupils to add the *figures* in the same manner as the balls were added.

Next, the pupils may copy the column of 2's from the blackboard, on their slates, and each one add it as it was added on the blackboard, and write the sum under the column.

When the pupils have had sufficient practice on a column of 2's, both on the blackboard and on their slates, to be able to add it readily, the teacher may again take the Numeral Frame, move *one* ball on the first wire, and *two* balls on each succeeding wire, while the pupils say, "one, three, five, seven, nine, eleven," etc., to fifty-one. When the pupils have learned to add the *balls*, thus, the teacher may write a column of 2's with a 1 under it, on the blackboard, so as to make the combinations produce the odd numbers. After sufficient training upon these combinations, both with the Numeral Frame and the blackboard, require the pupils to write similar columns of 2's with a 1 underneath, and add as before, writing the sum below the column.

Let the same process be pursued in teaching the addition of *threes*; first, by balls on the Numeral Frame, as three, six, nine, twelve, etc., then by figure 3's on the blackboard, and lastly by each pupil's writing the figures in columns on the slate, adding them, and writing the sum below. Then the *threes* should be combined with *one*, next with *two*, so as to produce different combinations of numbers, as with the *twos*.

During a still later stage, the pupils may be taught to add by alternating *twos* and *ones*; then *threes* and *ones*; then *threes* and *twos*; then *threes*, *twos*, and *ones*. Each of these steps should be taken first with *objects*, then with *figures* on the blackboard, and finally by the pupils' writing the columns on their slates and adding them. The same method may be pursued for teaching the addition of *fours*, *fives*, and *sixes*,



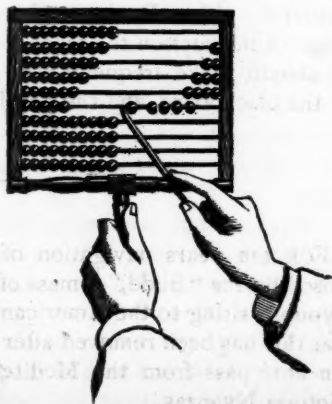
and their combinations with *ones, twos, threes*, etc., in the next or Ninth Grade. The order of the steps is indicated by the objects employed in teaching, viz.: Numeral Frame, Blackboard, Slates.

Of course, these exercises with columns of *figures* should not be introduced before the pupils have been taught to know figures as symbols, and to make them on their slates.

#### VALUE OF NUMBERS.

It is exceedingly important that the first ideas of the value of numbers, and of figures, be associated with numbers of objects counted. Both the *value of numbers* and the *value of figures* should be taught in connection with counting objects. Here, again, the *Numeral Frame* is the most useful apparatus. When the pupils can readily count *ten*, the teacher may hold the Numeral Frame before the class, move *one ball* on the second wire from the top, and request the pupils to say "*one ball*." Then the teacher may move *two balls*, one at a time, on the third wire, the pupils counting them as moved, thus: "*one, two; two balls*." Then move *three balls*, one at a time, on the fourth wire, the pupils counting thus: "*one, two, three; three balls*." Then move *four balls* in the same manner; then *five balls*, and so on. The position of the balls on the wire while the pupils are counting, may be seen on the sixth wire in the accompanying illustration of the *Value of Numbers*. While the pupils are counting "*one, two, three, four, five*," the teacher does not move the balls to the side of the frame, but leaves a space between each two balls, as may be seen in the illustration on this page.

The next illustration—*Simple Value of Figures*—represents the teacher in the act of moving the *five balls* to the side of the frame; and, as he does this, the pupils tell the number of balls, thus, "*five balls*."

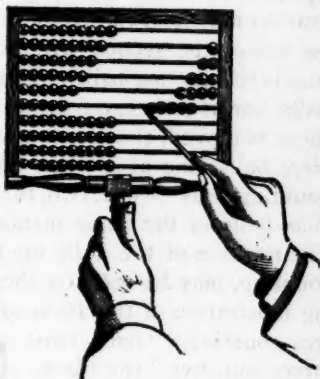


VALUE OF NUMBERS.

Let the same mode be pursued with each number from *one* to *nine*. First, the children count the separated balls, as each is moved part way; and as all are moved to the side of the frame, the pupils tell the whole number of balls moved. Next let the pupils tell the number of balls on each wire, thus: one ball, two balls, three balls, four balls, five balls, six balls, etc., to nine balls; nine balls, eight balls, seven balls, etc., to one ball, no ball. By these means the *Value of Numbers* will be learned thoroughly.

FIGURES.

Figures should be introduced as symbols of the number of objects counted, and presented first consecutively, in groups, or steps, as follows: from 0 to 9; from 10 to 19; from 20 to 29; from 30 to 39; etc. No succeeding group should be presented until the preceding one has been thoroughly learned, so that the pupils can read them at sight, in order, and out of order. While teaching the Simple Value of Figures, the Numerical Frame will be found a most valuable aid. During this stage of instruction the teacher should make frequent use of the blackboard, and the pupils of slates.



SIMPLE VALUE OF FIGURES.

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FOR ten years navigation of the White Nile has been closed by the "Sudd," a mass of vegetation. Ismail Pacha Ayoub, writing to the American Geographical Society, says that this has been removed after five months work. Vessels can now pass from the Mediterranean to the Albert and Victoria Nyanzas.

## EDUCATION IN JAPAN.

## III. MORAL TRAINING.

WHOEVER has studied the old system of education in Japan must have been impressed with the prominence given in it to the teaching of morals. The first books put into the hands of the children of *samurai* were the moral treatises of Confucius, and throughout the student's course, the study of what the Japanese call morals was carefully pursued. Among the common people, the morals of the Chinese sage, as expressed in the easily-comprehended formula of the "five relations," formed the standard to which all appealed. In addition, the more comprehensive and spiritual moral code of Buddhism, though robbed of much of its purity, beauty, and power by the superstitions that have overlaid or obscured it, has been almost equally efficient in procuring the moral status that now obtains among the Japanese people. It is somewhat surprising to a foreign educator, or, indeed, to an entirely disinterested spectator, to find that in the new system of public education there is little or no provision made for instruction in morals. In the schools in which the study of Chinese is still pursued, the moral treatises of Confucius will doubtless hold their former place of honor, and the reading of them will be considered as essential to the education of a student of Chinese. In those schools, however, in which the study of foreign science and languages is pursued, there is, as far as we know, no attention paid to the study of moral science. Such, however, was not always the case. Two years ago in the government schools of Tokei, and in some other places, moral science was taught and diligently studied. Every class of students able to read a foreign language, from the highest to the lowest, was supplied with text-books on morals, and the use of them continued during several months. Suddenly an order from the Dai Jo Kuan (the Emperor's Privy Council) to discontinue the study arrived in the various schools, this study was banished from the curriculum, and the manuals of Wayland, Haven, and Malebranche, were exiled to the dust and oblivion of the top-shelf. Text-books

on morals made by Christian writers were supposed to be too strongly flavored with Christian theology, and the name so long publicly outlawed and hated in this empire occurred too often on their pages to render it safe to allow such books in the hands of Japanese youth. A noted native educator, whose name is honored by the rising and the ruling generation with an honor such as few civil or unofficial natives of Japan ever receive, had "translated" Wayland's Moral Science, and its rapid and extensive sale at one time showed the interest taken in such subjects by the Japanese people. The "translation" is but a fragment. It omits all the positively Christian theology of the book, much of the theory and reasoning, and gives scarcely more than the results arrived at by the author, and a portion of the moral code which is expressed in the book. Those high officers who read only the translation, and were pleased with it, sanctioned the use of the various moral text-books of foreign countries, not knowing their full contents. On discovering their true nature, however, the order to discontinue the study of these books was sudden and peremptory. From this order there was no appeal. A few weeks later came an order from the Department of Education prohibiting all students in the government schools from attending or visiting a Christian church. Whether the two orders had any connection with each other, whether the latter was the logical sequence (in the Japanese mind) of the former, the writer confesses entire ignorance.

We do believe, however, that the Japanese authorities were fully justified in excluding from their schools the study of foreign text-books on moral science such as were used in their schools, and are still largely used in western countries. It is anything but a fresh statement to say that the majority of the foreign text-books on moral science are mainly compends of theology with an appendix on morals. In other words, the tenets of the orthodox faith of the modern Christian Church are made of greater importance than practical morals founded, or believed to be founded, on them. Belief in a theory is more highly valued than actual exhibition of moral conduct. We hold the teaching of theology, be it Shintô or Christian, to be entirely outside the province

of the government of a State. Further, we believe it subversive of genuine religion, which is entirely a matter between the individual conscience and the Creator. We look with unqualified admiration upon the framers of the constitution of the United States, who would have no acknowledgment of religion, or even of the name of God in that purely political instrument, and we deprecate the persistent attempts of some well-meaning but mistaken people to have it inserted in that document which does such honor to the consciences of all men. We hope to see the day when the reading of the Bible ceases to be obligatory in the public schools of the United States. We watch with intense interest the efforts made to secure unsectarian and purely secular education in the schools supported out of the public funds of England. We delight to pay our praise to the British government for giving to India a system of public schools in which all religious teaching is strictly forbidden.

The above will make it sufficiently clear to our readers that we are no advocates of the teaching of religion in the public schools. We hold that a government school should give to its pupils the best possible secular education. The teaching of religion should be prohibited in all schools supported out of the public funds. Were we discussing the question as to how religion was to be taught, we should point out the place and means. The toleration of all religions, and assistance or propagation of none, we believe to be properly incumbent upon all enlightened governments. Always provided that a citizen obeys the laws of the country, the government should inquire into or interfere with no man's religion.

But, while religion is left to the individual conscience, or to the family, or to the church, the teaching of morals form a prominent part of public education. The tremendous importance of an enlightened and sensitive conscience, and a thorough knowledge of right and wrong, in the minds of the youth of a country, cannot possibly be over-estimated. We plead most earnestly for the introduction of the study of morals into the schools of Japan. We think in this country, especially in this transition period of its national life, there exists a peculiar urgent need of sound moral instruc-

tion. The truth of this statement may be seen from a survey of the facts. The old religions have lost much of their force and hold upon the minds of the rising generation, especially those engaged in the study of Western learning. The old sanctions are weakened, the old virtues are sneered at. The vices of foreigners—often more apparent, because more ostentatiously displayed, than their virtues—are being largely imitated by the Japanese. Some of the new and strange forms of vice have a fascination in the eyes of the natives merely from their novelty. The increase of the diffusion of Western ideas among them will have a disastrous effect upon the moral character of the Japanese people unless accompanied by the correctives which in other countries always accompany them. In the very constitution of the Japanese character, as exhibited in the rapidity with which they see the superiority of foreign ideas, and the haste with which they adopt them, there is an element of danger—the danger of seeing but one-half of a question, of looking at different ends of the microscope, and of eagerly embracing half-truths. A further liability to error arises from the old defective education in which no distinction existed between mental and moral science; and according to which, education *was* morals, and a man instructed in the classics was, of necessity, a moral man. While the action of the Japanese in providing a system of public instruction in Western learning, is to be nobly commended, they should be warned of the dangers that are to be guarded against. It is notorious that though the tendency of education is to decrease crime, yet the most daring law-breakers are in many cases educated men.

We do not believe that Japan can safely exclude from her public schools the teaching and study of morals. Among the various ethical systems, which shall she choose?

Taking it for granted that the highest and most complete, in a word, the best, system of ethics should be the one chosen to be taught in the schools of Japan, we, on no hasty impulse, urge that the ethical system of Jesus of Nazareth, who taught in an obscure province of the Roman Empire, but whose teachings are the most cosmopolitan of any age or of any teacher, be the one chosen. It is well known that



the simple and sublime morals taught by this master of ethics, are honored and practiced even by many men in foreign countries who do not worship him or accept the doctrines usually called Christian. We do not ask that the Japanese should allow the professional or lay teachers of the dogmas of what is generally accepted as the Christian religion to propagate these dogmas in their schools. We simply urge that the ethical ideas and the moral precepts of Jesus Christ be taught in Japanese schools. As regards the choice of text-books we should banish all those in which dogmatic theology is taught as part of a system of ethics. We should adopt those in which the quotations from the Bible, and the words of Jesus, are used to explain, illustrate, and enforce purely ethical precepts. Such books are to be found, and probably the best examples are the manuals of Haven and of Hickok. It cannot fairly be charged that the teaching of these books is equivalent to the propagation of the Christian religion. In enforcing the special virtues, such as truth, chastity, practical benevolence, etc., to which the Christian system of ethics gives special prominence, the teachings of the Great Master are in these works fully set forth. Such teaching, it seems to us, Japan needs most. We do not touch the question as to whether the moral character of the Japanese people is high or low. We plead that Christian ethics should be taught in the schools of the country, and this we believe the Japanese can do without necessarily accepting the Christian religion. We ask that the Christian ethics be studied in preference to those of Confucius, or of Shaka, or of any other teacher, because we believe them to be the purest, loftiest, and most comprehensive, and, as such, better calculated to elevate the moral condition of the people of this or of any other country. The teachings of Confucius and Shaka have influenced the Japanese mind for over twelve centuries—ample time for the full development of their effects. Looking at the moral character of his nation, what enlightened Japanese is satisfied with it, or even believes but that it is far behind that of Western nations? Is it not time that another and a better system—one that includes all that is valuable and good in Confucius and Shaka, and rising far above either, gives new



principles of action and prescribes superior rules of action, and, by widening the area of motive, broadens the whole nature of man—should be tried?

We resist, in this article, all temptation to treat the question of religion. Though we believe religion to be the great, the chief inspirer to virtue, we ask of the Japanese government only for toleration of all religions in the land, and the patronage or propagation of none. Religion is a matter between the Creator and the individual soul; but ethics concerns itself not only with God, but with government, with society, with individuals. Hence the State, in training good citizens, should in its schools instruct the rising generation in ethics as in science, making use of the system which time and experience and proved results have shown to be the best. Without moral training the education of Japanese youth is sadly deficient. If the present neglect of moral training is persisted in, we believe the result will be most disastrous in the future.—*Prof. W. E. Griffis, in Japan Weekly Mail.*

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AN exchange says that at Lyons, N. Y., the Superintendent of a Sunday-school offered prizes to those pupils who should commit to memory the greatest number of verses from the Bible. Not long since the trial was made, and the successful contestants repeated respectively 4,600, 3,629, and 2,927 verses. The age of the children, who are all boys, is not given, but from what is said we infer that they are all very young. Such feats of memory, especially in young children, are wonderful, and are undoubtedly gratifying to the pride of parents. A bright child under the pressure of excitement can accomplish such labor, but it is done at a tremendous expense; it weakens both body and mind. The folly and wickedness of encouraging children in these performances cannot be too strongly condemned.

*EXPANSION OF A SPERM CANDLE INTO FLAME.*

NOTHING takes the uninitiated more by surprise than the ordinary operations of nature when duly scrutinized,—as, for example, the boiling of water or the burning of fuel. The mere expansion which solid or liquid matter undergoes in passing into the vaporous state, when measured in such way as to become visible, is simply amazing.

The expansion of water into steam is usually set down at 1800 volumes, that is, one cubic inch of water will expand into 1800 cubic inches of vapor, which will as completely fill the larger measure with its light and vaporous bulk as the water filled the lesser, and which will as effectually exclude any other body from occupying the same space with it. It was the discovery of this fact, in connection with another scarcely less important,—viz., the instantaneous reduction of steam to its original bulk as water,—which brought forth that tireless giant of modern days, the steam engine. The expansion of gunpowder into its constituent gases, on being exploded, is set down at about 2,000 volumes; but its explosive action, and the increase of its volume by heat, causes the expansion to seem much greater than is found to be true when the evolved gases are collected and measured after being cooled.

One of the most satisfactory experiments of this kind—because the materials for the experiment, and the calculations attendant, are within every one's reach—is the expansion of an ordinary sperm candle into flame. In trying this we need not aim at any critical exactness, but may take the facts as they appear to the eye.

A good sperm candle, a foot long, and an inch in diameter, will burn probably about twenty hours, with a flame whose horizontal section will equal one-sixth that of the candle itself; and this flame will ascend with the rapidity of about three feet per second, as may be proved by moving the candle upwards by hand until the *flame flattens*. With these rough data for our guide, we may easily satisfy ourselves that a flame one-sixth the sectional magnitude of the candle, ascending for twenty hours at the rate of three feet per second, is mathematically equivalent to a flame, of the

same sectional magnitude of the candle, (that is, one inch,) ascending for ten hours at the rate of one foot per second. Now, let us suppose that this flame, instead of cooling so rapidly as to cease to be luminous at the distance of two and a half inches from the wick, continues its luminous course directly upward, and ascends for ten hours, as a cylinder of light of the same diameter as the candle, at the rate of one foot per second, it will gain as many feet in height as there are seconds in the hours, that is, thirty-six thousand; in other words, the substance of the sperin candle when heated to incandescent gas, so as to appear in that hollow, shell-like form which we call flame, if measured by the data given above, expands *thirty-six thousand times*,—which is the same in bulk as if it formed a luminous cylinder one inch in diameter and six and two-third miles in height!

F. R. G.

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*A LONDON NIGHT SCHOOL.*

THOSE who have attended a New York night-school will read with interest an account of a London school which is described in *Cassell's Magazine*. It would be unfair to compare the behavior of these English pupils with that of American pupils, unless we select for the comparison the worst school we have, for the attendants at this London school are drawn from a very low grade of population. To those who know nothing of our own night-schools, this article may prove useful in awakening an interest in them.

Starting from more fashionable parts towards the West End, after dinner, on a peculiarly raw night, with drifts of rain at intervals, it is only the consciousness of doing good as a teacher that tempts us from the fireside. Buffeting the elements as best we can, the station is reached, and we are soon rushing under street after street of the great city, till we near the Tower; when, suddenly emerging, the train hurries us over house-tops, through a myriad of chimneys, to the classic regions of Wapping and Shadwell.

There we once more dare the wind and rain, and press on foot through gloomy, half-deserted streets, under the shad-

ow of vast warehouses, or over a draw-bridge every now and then, with the water beneath gleaming as black as ink, and the reflection of a gas-lamp flaring on it. A solitary policeman, a watchman, two or three squalid women with shawls over their heads, a few noisy revellers with pipes in their mouths—these are all we meet, till at a sudden turn we enter a narrow street; evidently thickly populated, and find a crowd of men and lads brawling round a door. That is the school, and these are companions of the scholars, who, for some reason or other, will not go in, preferring to make a disturbance outside. They stand back for us to enter; and on opening the door, we find ourselves in a small room (which has been hired in default of a regular school), crammed with boys and youths at desks, writing (or trying to write), and anything but orderly. One slyly pulls another's hair behind his neighbor's back; another smudges his friend's copy; a third walks down a row to ask a question of the clergyman, and thumps each one in the back as he passes, looking smilingly unconscious, at the end of the trip, that he is the cause of the hubbub that results.

The atmosphere is indescribable; but the sooner we get to work and assist our clerical friend, the better; so we boldly dash into the little Black Hole of Calcutta, and commence setting copies. Writing is the special occupation which these lads love. Reading they seem to tolerate merely for the sake of writing. Turning round, we find a lad of small brain-capacity, and with villanously low forehead amusing his neighbors at our expense; he has probably been pouring ink on our coat. We admonish him, and things are quieter, till a lad with very close-cropped hair (the unmistakable jail cut) kicks a smaller one opposite to him by way of a diversion. That small lad cries out, and all but swears, whereupon the clergyman, at length justly incensed, takes the offender by the arm, and thrusts him out of doors. The mob outside, which has hitherto contented itself with howling and singing comic songs, greatly to the distraction of the pupils, now hails the new-comer with a shout, and at once, under his instigation proceeds to overt measures, kicking the door, beating at the window, howling like fiends, etc., etc. Let the reader fancy the forty lads

inside, who are supposed to be learning under the influence of this delightful brawl, as their ears think it—let him fancy their grimaces and distraction (the dirtiest of faces matching hands that have been strangers to soap for many a day)—then let him picture to himself our efforts to keep up their attention, and a diplomatic visit to the door by our head, which is completely thrown away, as his expostulations are received with a volley of yells, and he will see that teaching a night-school at the East End is no light matter.

At length there is a lull outside, and—save that a shock-headed rascal has just put the candle to the red hair of a lad by him, busily engaged, with sprawling arms and mouth wide open, in trying to write “Mother,” which naturally raises a slight commotion—our prospects seem brighter. There is a second room overhead, where a dozen men are at work reading, when suddenly we hear a crash of glass and a disturbance amongst them, and one comes down with rueful face to say that a potato has been thrown through the window, and struck him. At the same time, a roar of laughter outside, and rush of scampering feet, testify to the delight of the perpetrators. Much, too, do the lads laugh over their books at the man’s anger, and the poor curate feels that this is anything but a propitious night for teaching. He goes to the door carefully, for all is unusually silent outside, and he fears an ambuscade. Welcome sight! Policeman X 1264 stands there, touches his helmet, and says: “Sorry I could not come sooner, sir; but I will see that these horful boys don’t annoy you no more to-night.” Much gratified, the curate resumes his work till the hour expires, when, with a chorus of shrieks and groans, every lad seizes his cap, attempts to upset his neighbor or the candles, and rushes off. The curate sighs, but knows it would be worse than useless to keep them in while he said a prayer or two. They would never come again, and all his hopes of them, small though these be, would be at once dashed to the ground.

It is only fair to say that this school which we have described is an exceptional one, in a low population, and presided over by too small a teaching power. Hence the license that prevails; our friend the curate thinking it bet-

ter to get hold of these lads in this way than not at all. A small percentage profit by his labor of love. The seed of better things may lie dormant in others till a more fitting season (often solitary confinement) causes it to spring up and bear a scanty crop. At all events, he feels that, like Milton, he must "bear up and steer right onward," doing his duty while he can, and trusting to the future, in which his successors may see some results of his toil. So he cheerfully blows out the lights, turns off the gas, and then, locking the door, takes a gasp of fresh air and our arm, and steps out, through rain and mud, to his solitary lodgings. Doubtless, one day, he will meet with his reward.

As School Boards extend their operations, and compulsory attendance, while young, at an elementary school, begins to tell upon such an ignorant and degraded population as this, in which we have so slightly been aiding the curate, the necessity for night-schools will either be lessened, or a better class of pupils—one which has already overcome the drudgery of letters—will attend them. So our friend has some sure grounds of hope in the next few years, and, by way of defeating despondency at present, he tells us some anecdotes of what he has seen and heard at his school, which may amuse our readers. They must remember that these lads, being many of them mechanics, and all their wits being sharpened in the hard school of want and wretchedness, possess a keen sense of the humorous and a great aptitude for rough practical jokes.

Yet they are shrewd withal, and respect to a certain degree any one who has gained their confidence; but they think all strangers fair game. Thus it actually happened down here, says our friend, that a strange clergyman having come into the district, and being sent for to a house where a man was lying dangerously ill, his companions picked the clergyman's pocket while he was on his knees praying for their sick comrade. But to our more immediate object. One night, he told us, he was at a night-school still further east, to which a wicket-gate, opening on a small playground, gave admittance. A lamp stood by this gate; and after a saturnalia of yelling outside, much to his discomfort within, an active lad climbed up the lamp-post and turned



off the gas; then, blowing down the pipe, endeavored to put out the lights in the school. This was too much; so the curate rushed out to seize him, but stumbled, in the dark, over the gate, which had been taken off its hinges and cunningly laid in his way. A rush of feet, and a shout of "He's fallen over it! Run!" was all he heard of his tormentors when he picked himself up.

An elderly clergyman took the mastership on yet another night, but he never came again. The boys put out the gas (which, by the way, is considered amongst them the height of cleverness), and then commenced a free fight. The unfortunate clergyman leapt upon the table, and let his unruly pupils fight it out between themselves. A wag attended sometimes, who was nicknamed "Napoleon" by the rest. When all were at work one night, in such silence as could be obtained, a boy, with a very black face, looked shyly in, as if doubtful whether he should enter. Much to the amusement of all, Napoleon half rose from his seat, and said, "Thank you, we don't want any coals to-night!" Of course the boy abruptly disappeared. Some are so noisy that whenever the teacher's back is turned they begin a comic song.

Another young "scape-goat" (as an old lady termed them, meaning, probably, "scape-grace") put red-hot coals from the hearth into his neighbor's copy-book, and shut it on them. But we have said enough to show what some East-End night-school boys are. It is impossible to give one a good thrashing to restore discipline, or the school would at once be deserted. Indeed, the curate, when attempting to put out eight noisy fellows, one by one, on a certain occasion, was himself struck with a handful of mud in the face by a comrade outside. He bore it all, however, very philosophically; and it is only by such self-sacrifice that good can be done in the East-End.

How different is this uproar—this venture which one or two earnest men make against ignorance and insubordination—to the trim and regularly-attended village night-school! Doubtless it is far more unpleasant to work in the city school; but we came away from this with the sense of having done, it may be, a little good on our neighbors' be-



half; we felt that we knew more of our fellow-creatures, and had learnt greater toleration, from even in this slight manner having taken soundings, as it were, in the unfathomable ocean of crime and ignorance that surges around the richest city in the world. All honor to those who voluntarily give up the leisure and quietness of their winter evenings to work, as we have described, at ameliorating these East-End lads! And while the educated and refined English youth of a higher social grade are what they are, these teachers, we are assured, will never ask for assistance from them in vain.

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### CARING FOR PUPILS.

MANY teachers think that their duties end with the instruction and government of their pupils in school hours. Some do not even know where or how their pupils live. They meet their school as the transient lecturer meets an audience, and from thirty to fifty pupils are treated as if they all have the same home-life and the same disposition. Such teachers may instruct well, even in an attractive and pleasant manner, but a little care for and interest in their pupils would add to their usefulness and success. The thought, "The teacher cares for me," touches the heart of the child, and adds a new zest to study.

There are teachers who perform their school duties as faithfully as others, and yet who have hearts large enough for each child to find an individual place therein. When any are absent from school, they find out *why*, and, if sickness be the cause, they either go to see them, or send a note of sympathy, so that both pupils and parents feel that they are remembered by the teacher. If a pupil is difficult to manage, they talk over the matter, in a friendly manner, with the parent—not to complain of the child, but to find out, if possible, more of its disposition, and the best modes of managing it. Such teachers generally have the co-operation of the parents, as well as the good will of their pupils. Some portion of the time not spent in the school-room

ought to be spent in exercise; then, why may not the teacher go, once in a while, to the homes of the pupils? It is true that some of these homes are not very pleasant, but the words of interest and kindness there spoken, like bread cast on the water, may come back to the teacher, ere many days go by, filling the heart with gladness. Then cultivate your pupils' acquaintance more in the school-room, on the playground, and in their homes, and you will make life-time friends.

Another duty of teachers is the *physical care* of their pupils. If headache is prevalent among them, its cause should be discovered, if possible, and removed. The room may contain too much foul air, or the temperature may be too high or too low, or the pupils may have played too hard at intermission, with too sudden a suspension of activity on entering the school-room, resulting in nervousness, or palpitation and headache, or a checking of perspiration, with a liability to take cold if checked too suddenly. By mingling with the children at play-time, the teacher can check them if the play becomes too noisy, or the exercise too violent.

The manner of going up stairs needs the teacher's observation and care, particularly with the girls, many of whom go "with a hop, skip and a jump," taking two or three steps at a time. Laying aside the want of propriety in ascending stairs in this manner, the more serious error is, that it is in direct opposition to the laws of health. The proper way to ascend stairs is to take one step at a time; and to place on the step the whole of the foot, and not merely the toe, as many do. A few weeks after I commenced teaching I went to my physician, complained of a tired feeling every time I had to ascend the stairs at school, and asked how I could prevent it. He said, "You go up quickly, and only place your toes on the steps, don't you?" I answered, "Yes." He then gave me the rule which I have mentioned above; and after I had broken myself of the habit referred to, I found it not so tiresome to go up and down stairs.

Again, the seating of pupils with respect to temperature, should receive attention. After they have once assigned

seats to the pupils, some teachers will permit no change. They say, "If I permit one to change because his seat is too near the fire, or another because he is too far, I would have a constant changing, and much disorder would ensue." Severe cold weather does not usually last longer than a day or two, and when it does come and it is impossible to get the room comfortably warm in all parts of it, pupils should not be obliged to suffer, lest *perfect order* be disturbed. By going round from place to place in the room, the teacher can ascertain who are in uncomfortable positions, and necessary changes can be made. In this manner countless requests to change seats and complaints of being too warm or too cold may be avoided. When children see the teacher is trying to make them comfortable, they are more apt to wait patiently till they can receive attention.

It is a rule in some schools, that no pupil shall eat his lunch in the school-room at noon. In pleasant weather, this is well enough, but when the weather is cold, or chilly, or damp, children ought to be allowed to eat their lunch in the school-room, if another suitable room is not provided. A noon lunch at school is apt to be cold comfort any way, and no matter how nicely the room may be furnished, children should not be required to stand shivering in the cold to eat it. In answer to the objection that crumbs may be scattered and pieces of food be thrown around the room, and much noise be made, I would say, that there are few children who would refuse to sweep up the crumbs they make, and the discipline of the school should prevent the throwing of food around the room and the making of unnecessary noise.

It may be objected that this would compel the teacher to remain in the school-room all noon time, and not have any recreation. This need not be the case, except with very small children. The older pupils know *how* to behave properly, and if thrown on their honor, will, as a general thing, be true to it.

The above suggestions are not untried theories. They have been practically tested and proved true.—*National Teacher.*

*THE MIGRATION OF BIRDS.*

THERE is nothing connected with the fascinating study of ornithology that possesses a greater attraction than the migrations of birds. There is so much of the mysterious in their coming and going, and we know so little of the manner in which their journeys are performed, that our very ignorance lends an additional charm to the mysterious interest involved.

On some bright February morning, I go out into brown, sere meadows, and wander along the banks of a brook, covered here and there with dense thickets of tall alders and hornbeams, with an undergrowth of blackberries and greenbriars. Yesterday, the only inhabitants they contained were tree-sparrows; to-day they hold a party of red-winged blackbirds, whose harsh merry notes and jolly chatter proclaim their joy at being home again. They have come, perhaps, from reedy marshes that line the Virginia coast; or, perchance, from Carolina rice-fields; but no man saw them on their journey; silently and unannounced, they came and reoccupied their summer haunts. A little later, I visit the same wet meadows, and find them frozen at the depth of a few inches, though on the surface, the black soil is soft and muddy; then comes a heavy rainstorm the next day, and on the succeeding morning, they are alive with snipe. Or, some morning in May, when the woods are beginning to unfold their green robes and the towhee to call from the thickets, I find, here and there, a warbler or two; but only one or two, save, now and then, a troop of coronatas. A storm from the south sets in and lasts for a day or two; and when it has ceased, in the morning, I go out into the woods again; and hundreds and thousands of warblers of a dozen species are fluttering through the boughs and copses, and lispings in the tree-tops. How they came, I know not, nor whence; but here they are, where, a day ago, scarce one was to be seen. Two days more and nine-tenths of them are gone.

There are some birds whose migrations are apparent enough. In November we see flocks of robins passing

south, high up in the air, calling to each other as they go. In March, and again late in fall, long trains of crows silently stream across the sky; in September flocks of red-birds wing their way overhead, their presence betrayed by their mellow notes. The ducks, geese and cranes, with much noise and gabble, announce their passage through the country; and in the later days of autumn, the hawks, distant specks against the sky, are seen floating slowly southward after their departing prey. But the vast majority of birds come and go silently and unawares. No one sees the wren or the sparrow on its migration; no one knows how long they are on the way, or by what route they reach their destination. We know that they come from the south in the spring and return in the fall, and there our knowledge ends.

The regularity which marks the arrival and departure of some birds is quite remarkable. For five successive years, I noticed the first coming of the crow and red-winged blackbirds on the 22d of February, and so punctual were they, that at last I came to expect them almost as certainly on that day, as though they had been a company of players, announced to appear at a certain time and place. If the weather was unusually stormy or the reverse, their arrival was a day or two later or earlier. Between the 14th and 19th of October, I expected to see the southward flight of the crows; and very rarely did I fail to notice it within those dates. But other species show the very reverse of this regularity. The snipe and the ducks are notoriously uncertain in their movements, in some seasons coming weeks earlier than in others. The bluebird may be seen, in some years, every winter month; and in others, not one may be found till late in February. The bluebird, however, is a homesick little fellow away from his native orchards, and two or three fine warm days are apt to lure him back, even in the middle of January.

Of many species the males and females travel together; of some, the former precede the latter; but I know of none where the females migrate in advance of their mates. The robin is a familiar instance of the first case; and probably all the thrushes follow his example. The bluebird, in spring,

almost always travels in pairs, except very early in the season when a solitary male sometimes appears.

As a general rule, when the males are brighter colored than the females, the former precede the latter; and when there is little or no difference between the plumage of the sexes, both travel together either in flocks or in pairs. In the autumnal migration this distinction is obliterated, and nearly all birds associate together in small parties or large flocks, composed of both sexes; and with many the females and young retire southward, a little in advance of the hardier adult males.

Few birds are absolutely stationary. Even those that we see throughout the year are migrating to a greater or less extent. The robins that we meet with in midwinter have descended from higher latitudes, while those that passed the summer with us have gone to warmer regions. Specimens of the same species, taken in winter, differ from those of summer in being larger and stouter. The earliest birds that reach any given locality in spring are usually brighter colored and larger than those that breed there, the former passing farther north as the latter arrive. Most birds begin nesting immediately after arriving at their destination, and when, as is the case with the robin, the first comers appear weeks in advance of the breeding season, they remain but a short time, moving slowly northward until they have reached their homes, when they at once commence the task of raising their young, shortly after which they begin retiring to the southward. There is thus a constant movement going on, interrupted only by the brief breeding seasons; a general swaying north and south in which one limit is scarcely reached, before a retrogression sets in towards the other; and when, as is frequently the case, the southern limit of the northernmost representatives of a species, is north of the summer range of the southern races, the species is looked upon as resident, although the individuals composing it are strictly migratory.

Yet some species remain in the same localities throughout the year. The gallinaceous birds are true residents of the regions in which they raise their young; and many of the *Corvidæ* shift their quarters very slightly, if at all, in any



season. Some of the rapacious birds, especially among the owls, are quite stationary; and among the woodpeckers, are species that appear to reside constantly in the same localities. Other species, again, seem to be indifferently migratory or stationary. Of the vast numbers of mallards that frequent the ponds and streams of Texas, during winter, great numbers are said to remain and breed, while the others rove hundreds of miles to the northward.

The causes of migration are various; but the principal one is undoubtedly the want of food. Birds seek a milder climate than that of their native regions, because their means of subsistence fail, and they must either obtain it elsewhere, or starve. As soon as the chill of autumn destroys the greater number of insects, and banishes the remainder to their winter retreats, the insectivorous tribes are compelled to migrate to regions where a warmer sun sustains a sufficiency of insect life to supply them with food; and the granivorous species, finding their usual stores of seeds either becoming exhausted or covered with deep snow, follow in their track, while rapacious birds are obliged to accompany their prey. Only the species whose food-supply is unaffected by the inclemency of the season remain.

Violent storms, and sudden changes in the weather, are often preceded by, or accompanied with, extraordinary migration among birds. The immense flocks of pigeons and blackbirds that occasionally pass through the country are familiar to every one. Several years ago I witnessed an unusual migration of the latter bird, which I have never seen equalled, either before or since, not even in the coast marshes, where they sometimes congregate in enormous flocks. The latter part of February and first week of March had been very mild and warm, and great numbers of crows, redwinged and cow blackbirds had gone north. There came a sudden, violent storm from the north one night, accompanied by showers of hail, snow and sleet, continuing all next day, and driving before it immense multitudes of blackbirds. Vast flocks, flying close to the ground to escape the fury of the blast, passed by so continuously that it was often impossible to tell where one ended and the next began. For four or five hours the immense hosts kept



sweeping by ; the air at times seemed filled with them ; and I was vividly reminded of Audubon's account of the wild pigeons in Kentucky. The storm expended its fury within a few hours after the last blackbird had passed ; but although the next few days were clear and warm, not a bird reappeared for nearly a week. A similar migration of white-bellied swallows took place near Newark, New Jersey, some six or seven years since, in the latter part of October, just before a long northeast rainstorm, followed by sharp frosts. Their course was to the southwest ; and as if aware of the impending storm, their flight was hurried and direct, far different from their usual circling, easy motion.

Many birds prefer to migrate during peculiar conditions of weather. The crows almost always move north against a high March wind. A long rainstorm with heavy winds, in the early part of May, is almost sure to be followed, as soon as it has cleared away, by a great influx of warblers ; and I have noticed that the migrating hawks often appear in much greater numbers than usual under the same circumstances.

That an insectivorous bird, as the wood pewee, for example, should delay its coming for a month or more after its cousin the phœbe, is explicable by the supposition that the two birds prefer different varieties of insects, and migrate only when they are to be found ; but in the case of the granivorous birds, such an explanation is not admissible. It may, perhaps, be merely the force of habit ; and such a theory is borne out by the fact that at distant points on the same isothermal lines, the different species do not, by any means, preserve the same order of coming. The water thrush and the towhee arrive two weeks earlier in central Iowa, than they do in northern New Jersey ; the yellow-crowned warbler and two or three others on the other hand, are several days later ; while most of the birds appear about the same time. But however that may be, whether future migrations will fully and completely reveal all the causes which influence the migrations of birds ; or whether many of them are such as to baffle our researches, the subject loses none of its interest because we do not at present fully comprehend it, and must ever remain one of the most engaging studies in natural history.—*American Naturalist.*

*COMPULSORY EDUCATION IN NEW YORK.*

LAST winter a bill aiming to enforce education was introduced into the Legislature of this State. Notwithstanding the Act encountered organized opposition it ultimately passed both Houses and received the Governor's signature. The following are the main features of the measure, which affords evidence of having been drawn with no ordinary care.

1st. All parents and guardians are required to instruct children in their charge or cause them to be instructed in spelling, reading, writing, English grammar, geography and arithmetic. All children, not physically or mentally incapacitated, between the ages of eight and fourteen years, must attend some public or private day school at least fourteen weeks each year, eight of which shall be consecutive, or they must be taught at home fully fourteen weeks each year in the branches named above.

2d. No person shall employ any child under fourteen years of age during the established school hours of the locality, unless such child shall have attended some public or private day school fourteen weeks of the fifty-two weeks next preceding any and every year in which such child shall be employed, or shall have been instructed at home during the time above mentioned, and in the branches above specified. The child must deliver to his employer a certificate to this effect in the handwriting of his teacher. The penalty for disobeying this provision of the bill is fifty dollars, to be paid into the school fund by the employer, for each offense.

3d. Trustees are required to inspect the situation of all children employed in manufacturing establishments, in February and September of each year, and to report all violations of this law to the treasurer or chief fiscal officer of each town or corporation. For the purpose of such examinations the manufacturers are compelled to furnish correct lists of the children in their employ between eight and fourteen years of age.

4th. For violating any provisions of this bill one dollar fine shall be paid. For each succeeding violation, after having been properly notified, the offender shall pay five dol-

lars for each and every week's continuance, not exceeding thirteen weeks in any one year. All these penalties are to be devoted to school purposes.

5th. Trustees are required to furnish text-books for the children on the written statement of parents or guardians that they are unable to do so.

6th. On the statement of any parent or guardian that he or she cannot compel a child to conform to this act, the latter shall be regarded as an habitual truant and so dealt with.

6th. Boards of Trustees and Instruction are authorized and directed to make all needful provisions, arrangements and regulations for the discipline, instruction and confinement of habitual truant children found in the streets, subject to the approval of the Justice of the Supreme Court of the district. Two weeks attendance at a half-term or evening school shall, for all purposes of this act, which takes effect on the first day of January, be counted as one week at a day school.

It will be seen from the brief summary we have thus given of this important act that it proposes to put an end to juvenile ignorance in this State.

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THE English Science Commission has published a volume in which is brought together the testimony of eminent men regarding the duty of the State in the matter of Abstract Science. While there are differences in regard to the method to be pursued, the opinions are unanimous that it is the duty of the State to encourage original research. This means of course that pecuniary aid shall be granted to scientific institutions already existing, and that new ones shall be founded. It is stated that England is behind other European countries and America in this respect. The subject is one we are glad to see so heartily endorsed. It is a matter of economy to expend money liberally for such purposes. The outlay is soon made good by the discovery of cheap methods of doing work, and by utilizing things which had hitherto been considered worthless.

*CULTIVATE CHEERFULNESS.*

CHEERFULNESS is more a matter of will and discipline than of temperament or circumstances. Whatever may be our lot, we can be cheerful if we so determine, and upon this determination hinges to a great extent our happiness and success in life. "The best cordial of all," wrote Dr. Marshall Hall, "is cheerfulness." Dr. Johnson declared that the habit of looking at the best side of a thing was worth more to a man than a thousand pounds a year. Charles Lamb used to maintain that "a laugh was worth a thousand groans in any state of the market." Hume said "he would rather possess a cheerful disposition than with a gloomy mind to be the master of an estate of ten thousand a year:" and Samuel Smiles says: "Cheerfulness gives elasticity to the spirit, spectres fly before it. It gives harmony of soul and is a perpetual song without words. It is tantamount to repose. It enables nature to recruit its strength, whereas worry and discontent debilitate it, involving constant wear and tear."

No one escapes vexations, annoyances, trials. It is for each individual to determine for himself whether he will be borne down by them or will rise superior to, and be cheerful in spite of them. By how much we do the latter by so much we shall add to our own happiness and the happiness of those about us.

Few possess the surroundings which it is human nature to crave. The most fortunate and favored can, if so disposed, constantly see and covet things beyond their reach. The spirit of envy and discontent thus engendered will always continue, no matter what success they may achieve. They will ever be as far from real enjoyment and content as they are to-day. The royal road to happiness lies through a disposition and willingness to make the best of things as we find them, hoping and trusting perhaps for more, but still contented and cheerful with what we already possess.

We can cultivate a habit of cheerfulness, the same as any other habit. We can school ourselves to looking upon the virtues and not the frailties of those around us, to seeing the

bright and not the dark side of matters, and having done so we shall be surprised to find how much better we enjoy life in every way. Physiologists are rapidly reaching the conclusion that the condition of the body depends very largely upon the condition of the mind, or to quote another's language, "the body is more often disordered by the mind than the mind by the body, and the indigestion to which some ingenious materialists are wont to refer all misanthropy and dejection is more likely to be caused by dismal moods than to cause them." We say of such and such neighbors and acquaintances who go about with smiling countenances and are everywhere cordially welcomed, "they can afford to be in good spirits, because they are well and hearty." But ten to one if the very habit of being contented and cheerful does not materially contribute to this physical morale. He who leaves the "shop" behind him when returning home at night, dispels all thoughts of the day's cares and surrenders himself to the soothing, quieting influences which should be found in every family circle is bound to have an appetite for his roast beef and to be a good neighbor.

Instructors perhaps of all other persons should cultivate cheerfulness, because of the vast influence they have in moulding the characters of those entrusted to their charge. It is within their power to give bent and direction to the whole after life of their pupils. A signal illustration of this fact occurs to us. A few years ago there lived not far from New York a family of children who were morose and morbid by nature. Their father while indulgent was irritable and nervous, and in his general course toward them stimulated rather than allayed their untoward traits. To all appearances they were growing up as unhappy and unlovable as children could well be. Finally an aunt, who combined great buoyancy and amiability with firmness, came to live in the family as a governess and teacher. Her presence acted like magic upon the juveniles. She imparted her own cheerfulness of spirits to them, and for the first time their sulky little countenances began to lighten up with smiles. To make a long story short, the influence exercised by her changed the whole current of their lives, and instead of reaching manhood with a decided "talent for un-

happiness," they possess better, more contented dispositions than the majority of mankind. Every one of them attributes the revolution in their character to the presence of Auntie in the household. What she has done all teachers can achieve to a greater or less degree.

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CORRESPONDENCE.

MR. EDITOR,—Will you kindly permit us to say a word in your magazine in behalf of the truth?

"The Educational Reporter," "a publication devoted to" the sole and exclusive interests of Ivison, Blakeman, Taylor & Co., and published by that firm, deliberately makes the statement that "the publishers of Worcester's Dictionaries" "attempt to hoodwink the Southern people, by appealing to their controlling political passions." The only evidence Messrs. Ivison, Blakeman, Taylor & Co. adduce in support of this unfounded charge is certain quotations which, they allege, certain agents of ours "are permitted by their employers" to make. The quotations thus published are all taken from a circular issued by a gentleman of Augusta, Ga., on his own responsibility, without our knowledge, and so stated by its author, Hon. James M. Smythe. Not only is this statement of Messrs. Ivison, Blakeman, Taylor & Co. not true, but they were well aware, when they published it, that it was wholly untrue, either that we knew of its publication or permitted it. They knew that we not only did not permit it, but that we arrested its circulation the moment it came to our knowledge!

So much for this wholly unfounded charge, which its publishers knew to be wholly untrue when they prepared and signed it. Are Messrs. Ivison, Blakeman, Taylor & Co. themselves innocent of any attempt to "hoodwink the Southern people" by false appeals to their prejudices? In the spring of 1873, the agent of that house, circulated by the thousand, throughout Georgia, an anonymous circular in which—not Dr. Webster, but Dr. Worcester—is denounced



as a "*Radical*." This anonymous circular, thus distributed by Mr. R. E. Park, an agent of the house of Messrs. Ivison, Blakeman, Taylor & Co., purported to contain quotations from Dr. Worcester's History, giving an account of the late civil war. Dr. Worcester wrote no such history, in fact he had been dead three or four years, when the revised edition of his history was published, and the copyright of the history had long before passed out from the Worcester family. All this ought to have been known to Messrs. I. B. T. & Co. —yet their "agents are permitted" to circulate this atrocious libel on the honored dead, and this action of theirs is excused in a recent letter, in our possession, signed by Messrs. Ivison, Blakeman, Taylor & Co.

We leave the intelligent readers of EDUCATIONAL MONTHLY to make their own comments.

BREWER & TILESTON.

*Boston, June, 1874.*

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*CREAM OF THE EDUCATIONAL MONTHLIES.*

THE first three articles in the *American Journal of Education* discuss the course of study to be pursued in schools. One deprecates the prominence given to object lessons, another says that valuable years are wasted on those "incomprehensible abstractions" grammar, geography and mathematics, while a third laments the "mathematical madness" which he says prevails at the West. These writers, although diametrically opposed as to the facts of the case, unless they write concerning different localities, agree in condemning the pursuit of one study to the exclusion of all others. Under certain circumstances a man may with profit devote his whole time and all his energies to one branch of knowledge, but children can never profitably pursue such a course. While they are in school, and for many years after, they need studies which will develop them in all directions, not merely in one. So, without deciding as to the relative merits of object-lessons, mathematics or grammar, we may say that no one study, or system of teaching, stands so far above all others as to make it profitable to

devote exclusive attention to it. An article—"Advice to Teachers"—says a very true thing; that time saved by hurrying through a book, is time wasted. Many, anxious to say that they have read a great deal, go through a volume so rapidly that they know little or nothing of what they read. Some one has said, "Beware the man of one book." To read well is much more important than to read much.

*The National Teacher* contains a practical article on "The Teaching of History." At first the outlines of general history should be taught, leaving the details to a later period. After a good general view of the subject has been obtained, the history of a particular country or epoch may be taken up and studied thoroughly. If pupils can be led to read at home concerning the subject, it will be found very useful, both in imparting additional information and in instructing them in the study as pursued at school. They should however be constantly questioned to see that they understand what they read: that they gain ideas and not words. By following such a course pupils obtain an intelligent view of history. A new department of the *Teacher*—"Experimental Notes"—promises to be interesting and valuable. It contains brief notes on the preparation and performance of simple experiments, and especially on the construction of efficient and cheap apparatus. An electric battery and an electroscope are described in the present number. "The Art of Expression," "Parrots or Thinkers," and "Caring for Pupils" are among the other subjects discussed.

A contributor to the *Nebraska Teacher*, treating the much discussed subject of "Composition Writing," suggests as a means of preventing plagiarism, that essays be written in school during the morning hour. We are afraid that many pupils appropriate the thoughts, if not the words, of others and pass them off as original, thus defeating the object of composition writing, but we do not think such a regulation as the one proposed, necessary in order to prevent it. A teacher must be sufficiently familiar with a pupil's style of thought and writing to decide whether an essay is original or not. The objection to writing compositions in school is, that many are utterly unable to compose amid the distractions which unavoidably occur in a room where so many

are assembled. One good suggestion is made; to give pupils a variety of subjects upon which to write. In the "Editorial Department" the plan of frequent examinations and promotions is recommended, in order that bright pupils may not be kept back by the duller ones.

Hon. B. W. Byrne gives in the *West Virginia Educational Journal* a detailed plan of the six "Normal Institutes for Teachers," which are to be held during the summer. He suggests that the instructors organize the Institute as a primary school, with the teachers for pupils. After a lesson has been given and the method of teaching it exemplified by the instructor, he shall call upon members of the class to teach the same lesson. Attention is also to be given to the minutiae of school life, to order, good manners, etc. If these institutes are well conducted they can hardly fail to be beneficial. A contributor, writing upon "The Common School System" states, and we think truly, that the cause of much of the opposition to the schools is the expense they entail. They are expensive certainly, but money wisely spent upon education is well invested.

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#### EDUCATIONAL INTELLIGENCE.

THE Fourteenth Annual Meeting of the National Educational Association will be held at Detroit, Michigan, August 4th, 5th and 6th. Many prominent educators will take part in the exercises. Full particulars as to the names of speakers, and the subjects of discussion, will be given at a later date.

The American Philological Association will meet at Hartford, Conn., July 14th. A committee, of which Mayor Sprague is chairman, has been appointed to make arrangements for the meeting. At the last annual session several interesting and valuable papers were read. It is expected that the exercises this year will be equally interesting. Francis A. March, LL.D., of Lafayette College, is president of the Association.

The eleventh Anniversary of the University Convocation of New York will be held at Albany, July 7th, 8th and 9th; a month earlier than in former years.

The twenty-ninth Anniversary of the New York State Teachers' Association will be held at Binghamton on the 29th, 30th and 31st of July. There will be general sessions morning and evening; the afternoons will be devoted to special departments. Important topics will be discussed and eminent lecturers are expected to be present. There will be the usual reduction in railroad fares.

The annual meeting of the Ohio Teachers' Association will be held at Put-in Bay, July 1st and 2d. Among those announced to be present are Hon. H. A. M. Henderson of Kentucky, Hon. Milton B. Hopkins of Indiana, and Supt. Hancock of Cincinnati. The teachers of Michigan and Indiana have been officially invited to participate in the exercises.

The Wisconsin State Teachers' Association meets in Madison July 14th.

ARIZONA.—Mrs. Bidwell, Superintendent of Public Schools for Yuma County, writes that there are not thirty public schools in the Territory, but that this number will be increased at the opening of the next scholastic year. Teachers are liberally paid, if Mrs. Bidwell is correct in her statement that no teacher is paid less than one hundred dollars per month of twenty days, and that in most cases board and rooms are provided in addition, and passes are given upon stage routes and ocean steamers. The Superintendent says that they intend to employ only first class teachers, which they can undoubtedly obtain at the liberal salaries offered. It is also the intention not to employ male teachers after the contracts of those now holding positions expire. As yet the schools of the Territory are primary or lower intermediate, and are largely composed of Spanish children. Although pupils are required to study and speak English, a knowledge of Spanish is most important to the instructor.

CALIFORNIA.—The Compulsory Education Act, which was recently approved, provides that parents and guardi-

ans shall cause their children to be educated, and makes the neglect to do so a misdemeanor, punishable by a fine of from ten to fifty dollars. Census marshalls are required to make lists of all children of legal school age, and teachers, having these lists, are to note absentees, and report them to the proper authorities. Truant officers are to be appointed in cities of twenty thousand inhabitants, and each city or town is to have a board of inspectors. One section of the bill provides for a State institution for the gratuitous instruction of the deaf and dumb.

MAINE.—All, or nearly all, the rebellious students at Bowdoin College have submitted to the Faculty. A notice of the trouble in another place, hastily cut down from a longer article, may give an erroneous impression of our position on such matters. We wished to say that the reported action of the Faculty in ignoring the petition of the students was unwise; that it was treating young men too much like school children. On the question as to whether military drill should be abolished or not we have nothing to say.

JAPAN.—Dr. David Murray, Superintendent of schools and colleges, has made his first report to the Vice-Minister of education. After mentioning the great interest in education, expressed alike by officials and people, he speaks of the necessity of teaching the Japanese in their own language. Instruction given in English, French or German, can reach only a few; to be generally enjoyed the vernacular must be employed. Those who are now taught in foreign languages must be regarded as the future educators of the natives. Dr. Murray speaks in high terms of the Normal School at Tokei, and recommends the enlargement of the training school attached to it. Female education has attracted much attention in Japan, but enough has not been done. Women should be educated for home life and for the position of teachers. Referring to the colleges already in existence, Dr. Murray urges the necessity of liberally supporting them. He also recommends the founding of many institutions which will rank about with our academies, placing them in various parts of the empire, that a universal interest in education may be awakened.

CURRENT PUBLICATIONS.

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DR. EDWARD CLARKE's theories of Female Education continue to develop vigorous opposition. Following up Mrs. Duffey's spirited attack, *Professor George Comfort* and *Mrs. Anna Comfort, M. D.*, of Syracuse, bombarded "Sex in Education" at short range, apparently hoping if not believing that after such a terrific cannonade of King's English, they have completely silenced their antagonist. Having discussed his views under seven general heads in a one hundred and fifty page volume, entitled "Woman's Education and Woman's Health," they arrive at the following conclusions: that Dr. Clarke has thrown out to a popular audience, a hypothesis of his own, which has no place in physiological science; that he has sought to establish his positions by insufficient proofs, and to fortify them by inapt comparisons and illustrations and by erroneous representation of European ways; that he has omitted data which are very important in the general line of the argument; and that, in short, his whole reasoning is singularly unsound.

We have already expressed approval of the main features of Dr. Clarke's book, and do not propose here to question the injustice or justice of the above sweeping verdict. We will merely say that in pronouncing it, Mr. and Mrs. Comfort must not be at all surprised if the syllogistic charge which they make against him is flung back by Dr. Clarke's friends, viz., that of. first having conclusions, and then choosing premises to suit them. Certainly the average reader might infer from such argumentation, for example as that on page 42, that the writers had entered upon the work of investigating Dr. Clarke's theories with a prior determination to demolish him. But however this may have been, their little book is interesting as presenting the anti-Clarke side of the question in its strongest light.

"WARREN's Brief Course in Geography" aims at brevity and conciseness, eschewing details which often cumber and cloud the youthful memory, and so classifying the physical features and essential facts of every country, that they can



be readily seized upon and retained. The idea is a good one, provided too much is not sacrificed to brevity. The maps are well executed. We do not agree with the author, however, when he says, "rail-roads are so common, that it is superfluous to represent them." They are, so to speak, the arteries in the national system, and should be indicated in common with the main water courses, as showing the channels of trade and immigration. Furthermore, the maps might contain the names of more places without interfering with the general design. The work is enlivened with spirited illustrations, which are both fresh and original. We like the plan of displaying the leading topics. It brightens the page and assists the learner.

We discover none of the absurdities which so frequently mar geographies, and the reputation for accuracy which Warren's text-books have already acquired is sustained. There are other points about the "Brief Course" which recommend it to those who have not time for an extended study of Geography.

"A Practical Course with the French Language" has been prepared by *Louis A. Languellier* and *H. M. Monsato*. It introduces a great number of exercises. This it seems to us, is the best feature of the work. Quite a number of the exercises apparently intended for reading, have the English equivalent side by side with the French. The exact advantage of this arrangement we do not perceive.

"The Annual Report of the State Geologist," of New Jersey, *Dr. Geo. H. Cook*, is interesting and valuable to the dwellers in that "far country." Among many other matters it notices what has been done in drainage, and in surveying the boundary between New York and New Jersey. Accompanying the report is a map of Northern New Jersey, and a topographical map of Jenny Jump Mountain, with its iron mines. The list of iron mines is very full, showing what work has been done and its results. Dr. Cook says that there is a great increase in the number of applications for information in regard to mines, minerals, clays, sands, marls, and other natural products. This is an encouraging sign that farmers are learning to work their land scientifically.

## MISCELLANEA.

A WRITER in the *R. I. Schoolmaster* says that "queen Victoria is an *immediate* descendant of Egbert, who, in the year 827, united the Saxon Heptarchy, and became the first king of England." Victoria must therefore have been born considerably earlier than we supposed, and by this time is well along in life.

A SERIES of six Normal Institutes are to be held in West Virginia, the object being to instruct teachers in the art of teaching and managing their schools.

THE tower of the new scientific building connected with Princeton College is within twenty feet of completion, and from its summit a view of fifteen or twenty miles is obtained. It is built of brown stone, and surmounted and embellished with light Ohio sandstone.

PROF. T. DE WITT REILEY will resign the rectorship of the Rutgers College Grammar School at the close of the present scholastic year. During the hundred years of its existence, this institution has never been more prosperous than under Prof. Reiley's care, the average annual attendance having been nearly two hundred. The new rector, Rev. Abraham Thompson, has had extensive experience as a teacher in the West.

GERRIT SMITH recently gave \$10,000 to Hamilton College, and Mr. F. C. Sessions, of Columbus, Ohio, gave \$5,000 to Oberlin, and to Marietta a like amount. Dartmouth has received a donation of \$1,000 from Hon. J. E. Sargent, of the New Hampshire Supreme Court, to found a scholarship in memory of his son. Union College has had gifts amounting to over \$350,000 since last commencement.

A CURIOUS phenomenon happened at Belfast, Ireland, recently, while some men were sinking a well. 'A light having been let fall, a flash overspread the bottom of the well; and a pipe having been conveyed from the bottom of the well to the second story of a building, the gas was ignited, and continued burning all day. It proved to be marsh gas, probably generated in decomposing vegetable matter.

THERE were 688 applicants for admission to the Normal College in New York city this year, sixteen of whom were from colored schools. The number of candidates for admission to the College of the city of New York was 606, of which number 451 were admitted.

THE corner-stone of the American Museum of Natural History was laid by President Grant in Central Park, New York, June 2d.

NATURALISTS will accompany the expeditions sent from England to Rodriguez and Kerguelen's Land to observe the transit of Venus.

AT a recent meeting of Convocation of the University of London, a motion to permit women to take degrees in the University was carried by a majority of 83 against 65. It is said that the subject will soon be brought up before the Senate, with whom all legislation originates, Convocation having only a power of veto.

THE treasurer of the "Agassiz Memorial Fund" writes that up to June 11th, about \$4,000 have been received, and that contributions continue to come in.

COMPLAINT having been made against two New York teachers for inflicting corporal punishment, the matter was investigated by a Committee of the Board of Education, and a report was made reprimanding one and transferring the other to another department. The tenor of the report, which was adopted by the Board, was in favor of allowing teachers to inflict corporal punishment in extreme cases.

A CORRESPONDENT, who is "going to Be a School theacher," writes for a "Penmanship," because he "can't Write good nugh yet." He wants to "see hoes is the Best."

MANHATTAN Island was originally bought from the Indians for \$24.00.

THE School of Natural History at Penikese will open July 7 and close August 29. The expenses last year were \$3.40 per week for board, and \$10 a season for the use of a furnished room.

## PUBLISHERS' DEPARTMENT.

**A Rare Opportunity.**—The withdrawal of Prof. RICHARDS from the Lecture platform at the close of the past season is to be deeply regretted, because his specialty is so rare. Indeed we know of no scientist who has gone like him even across the Mississippi with an extensive paraphernalia of Electrical and Optical instruments. His brilliant illustrations will henceforth be missed—as he will lecture only on special and exceptional occasions.

His apparatus, we learn, is *for sale*. A list of it in our hands shows a large and varied accumulation of instruments in Chemistry, Optics, Electricity and Physics generally. There are frequently duplicates and triplicates, so that while the apparatus would almost cover the whole need of a first-class college, there would still be numerous pieces, such as Coils, Batteries, etc., left for separate purchase. It is certainly a rare chance to obtain tried and efficient instruments, and we will do what we may to promote the distribution of the Professor's outfit, regretting still that he feels constrained to retire from a service in which he has achieved such a brilliant success.

His address is Pittsfield, Mass.

**Physical Science Apparatus.**—We welcome this month to our advertising pages Mr. JOHN BROWNING, of London, the most prominent optician perhaps—at least in the higher scientific sense of that name—in England. A scholar, entitled to wear the suffix F. R. A. S. to his name, he devotes himself to mechanical work in the advancement of science, and furnishes the great observatories of the British Isles, and numerous institutions, with his optical instruments. In Spectroscopy he is probably the most advanced designer and maker, and his apparatus for Spectrum projections is, on the testimony of Prof. RICHARDS, the distinguished American Lecturer, the most efficient and compact he has ever used. We cordially commend Mr. Browning's card to the attention of professional Scientists and Teachers of Science, and will do all in our power to facilitate their communication with him.

**Eldredge & Brother**, No. 17 North 7th St., Philadelphia, will have ready in August, *Language Lessons for Beginners and English Grammar and Analysis*, by Prof. Jno. S. Hart, LL.D., of the College of New Jersey. The advent of these books will be looked for with unusual interest by the thousands of teachers who are using the other text-books by the same author.

So many commendations of *How to Teach* are constantly coming to hand, that space can be found for only a few of them.

**Thomas Holmes, D.D., Pres. Union Christian College, Merom, Ind.**—"I regard it as the best Manual of Methods within the reach of teachers at the present time. No person should commence teaching without making it a careful study."

**T. C. N. Vance, Prin. Ky. Normal School.**—"It certainly is a work of great merit, and therefore should be in the hands of every teacher."

**Frederick S. Wood, Co. Sup't, Metropolis, Ill.**—"My teachers are very much pleased with *How to Teach*, and say it is the best work on teaching which they have seen."

**Dr. Mendenhall, Greensboro', N. C.**—"I know of no treatise which the teacher can more appropriately make his hand-book."

**Conn. School Journal.**—"Undoubtedly one of the best guides to young teachers yet published."

**Murray's Land Surveying** has been introduced into Dartmouth College.

**Botanists** will be glad to learn that *Oliver R. Willis, Ph. D.*, has written "Catalogus Plantarum; A Catalogue of Plants growing without Cultivation in the State of New Jersey." It is a book which every botanist should own. Published by J. W. Schermerhorn & Co., 14 Bond St., New York.

**Wanted.**—An experienced teacher at each of the State and County Normal Schools, and other gatherings of teachers, to call their attention to a work of great interest to the profession, a work highly commended by many of the leading educators of the country. This offer will give teachers an opportunity to engage in a profitable business venture, and not compromise their professional position. Full information will be given by addressing **ALEXANDER HILL, Box F, Cincinnati, O.**

**Fulfillment Better than Promise.**—Some of the papers last year were six or eight months behind hand in filling their orders for chromos. Talmage's paper, *The Christian at Work*, has taken time by the forelock, and has scores of thousands piled up in its warehouse ready for any emergency. Agents, make a note of this. Sample copies and terms sent free. Office 10, Chambers street, New York. See their advertisement.